

**ABSTRACT:** *The following is a proposed suggested amendment for the abstract.*

~~The invention relates to a~~ The method and device for modifying the probability of deexcitation in relation to isomer nuclides, ~~consisting in comprises the step of~~ exciting samples containing nuclides having a metastable state with a half-life varying between one microsecond and 50 years. ~~The, the~~ excitation is being achieved by irradiation with entangled gamma rays produced either by a radioactive isotope, which emits a gamma-ray cascade, or by collisions between accelerated particles and a target, caused by the Bremsstrahlung effect. According to Quantum Mechanics, the gamma-rays produced are entangled, and said entanglement is transferred to the nuclei of the isomer nuclides. As a result, each isomer of the radioactive product obtained has a half-life, which can vary over time and which is initially lower than the theoretical half-life thereof. The inventive device comprises an entangled gamma source and a device for sequentially irradiating one or more samples over a duration, which is determined as a function of the half-life modification to be obtained. The product, method and device are particularly suitable for medical treatments and chemical engineering applications.

*Clean text is provided for convenience on the next page:*

The method for modifying the probability of deexcitation in relation to isomer nuclides, comprises the step of exciting samples containing nuclides having a metastable state with a half-life varying between one microsecond and 50 years, the excitation being achieved by irradiation with entangled gamma rays produced either by a radioactive isotope, which emits a gamma-ray cascade, or by collisions between accelerated particles and a target, caused by the Bremsstrahlung effect. According to Quantum Mechanics, the gamma-rays produced are entangled, and said entanglement is transferred to the nuclei of the isomer nuclides. As a result, each isomer of the radioactive product obtained has a half-life, which can vary over time and which is initially lower than the theoretical half-life thereof. The inventive device comprises an entangled gamma source and a device for sequentially irradiating one or more samples over a duration, which is determined as a function of the half-life modification to be obtained. The product, method and device are particularly suitable for medical treatments and chemical engineering applications.